

THE SLATE ROOF BIBLE

• CONTENTS •

Foreword: Death of a Barn	2
1. Understanding Slate Roofs	5
2. From Rock to Roof — What Is Slate?	17
3. Identifying Roof Slate	27
4. Wales	39
5. Vermont — New York	59
6. Pennsylvania Slate	77
7. Peach Bottom Slate	93
8. Virginia and Georgia	103
9. Canada and Maine	111
10. International Slate	119
11. Safety First	147
12. Tools and Equipment	165
13. Installing Slate Roofs	181
14. Traditional European Slating Methods	229
15. Roof Inscriptions and Designs	239
16. Recycling Slate Roofs	251
17. Repairs and Restoration	257
18. Flashings	285
19. Chimneys	305
20. Valleys	325
21. Siding, Tile & Asbestos, Box Gutters, Snow Guards . . .	341
References	351
Bibliography	352
Industry Resource Guide	353
Index	369

◀ Opposite page: “Dragon Castle” near Königswinter, Germany, with German slate on the roof.

DEATH OF A BARN

I watched a hundred-year-old barn burn to the ground one day. As the roaring flames engulfed the timber-frame building, a fat raccoon suddenly appeared on the ridge of the roof. The raccoon had apparently been roused from its sleep in the hayloft by the smoke and flames and shouts of the firemen and had quickly scampered up the oak barn beams to find a safe place to hide. As the flames spread and the heat grew more intense, the raccoon obviously understood that it had made a bad move. It started pacing nervously back and forth along the ridge. Those of us on the ground who were gaping at the spectacle were horrified by the thought that the raccoon was about to be broiled alive, right before our eyes. The firefighters tried to knock the animal off the roof using the spray of the fire hose, but the raccoon, not as dumb as it appeared, simply dodged the water by ducking behind the roof ridge. Soon the situation grew unbearable for the animal as the flames licked over the roof, and the raccoon, in an obvious act of desperation, did a swan dive off the gable end into a clump of bushes forty feet below. It looked like a suicide dive to me, but the animal surprised everyone by bouncing off the ground with a thud, then running away. Perhaps raccoons, like cats, have nine lives. Not true for barns.

In this case, the owner wanted the old, hand-hewn barn destroyed and had called the fire department to burn it down. Why? It was, after all, a beautiful, century-old structure, a memento of the agrarian days of rural Pennsylvania, of a time when everyone in the country had farm animals and lifestyles that centered around animal husbandry. When the barn was built in the late 1800s, people still got together and helped each other in their communities. They didn't hop in a car and drive to each other's farms, because there weren't any cars. There were hardly any roads, and what roads existed tended to be rough and impassable in bad weather. There wasn't any electricity out on the farms either. People relied on their horses for transportation, and if the roads were too muddy for horse and buggy, they just stayed home, or they walked.

A cooperative group had raised this barn, probably the same group who got together at the local church on Sunday to pray for good crops, or a safe birth for a young couple, or life renewed for a sick elder. On Saturdays they congregated at the local grange hall, or in this very barn to plan political strategies or just to have a good time square dancing by the light of kerosene lanterns.

When the barn was built, it symbolized all the hope and promise of a developing country. People were settling the land, clearing the fields and planting crops. Their survival rested on the constructive relationships they maintained with their neighbors and their cows, horses, sheep, pigs, goats and chickens. The barn would house these animals, thereby providing a livelihood for the country people whose new homesteads sprang up in the Pennsylvania countryside after the Civil War like mushrooms after a rain.

The barn bore testimony to the use of local trees for construction — the beams were wrought from white oak, chestnut, or yellow poplar, while the siding was cut from pine or hemlock. The post and beam frame required no nails but was fastened together with elegant mortise and tenon joints locked into place with stout wooden pegs called trunnels or "treenails." The beams were shaped by hand with broad axes, adzes, and chisels. They were cut with handsaws and drilled with breast drills, braces, bits, and augers. No power tools were used to build this barn, which remained square and erect after a century of use. The proud builders no doubt stood back and admired their work when the construction was completed a hundred years ago; then they communally feasted and together celebrated their accomplishments, their communities, their country, and their lives.

The elderly widow who eventually owned this farm called me one day and asked me if I wanted the slate roof that was on the barn. The barn had to go, she said, because it was beginning to collapse and was becoming a hazard. I could have the roof if I wanted it, as well as any other parts of the barn, but I only had two weeks to get it because the fire department was going to burn it down for her. I went over to the farm and inspected the barn to see if salvaging the slate was possible. Some barns are so far gone that climbing on the roof would be an unacceptable danger. This barn only had one corner rotted beyond reasonable repair; the rest of it was in good condition, so I agreed to remove the slates.

Later, when I climbed on the barn roof, I saw why that bad corner had rotted: three slates were missing on a spot that was, coincidentally, directly over a main support post. Aside from those three slates, the rest of the slate roof was in good condition. Of the 3,000 original slates on the roof, three of them, or one tenth of one percent, had broken and never been repaired. The resulting hole in the roof was on the back of the barn where it was not easily seen, so it was ignored. The owners had allowed the rainwater to leak through the roof decade after decade until the barn was crippled, then destroyed. Three slates take about one hour to replace, including setting up and taking down ladders. For want of one hour of professional maintenance, another hand-hewn barn, a symbol of America's rural heritage, died.

The barn wasn't a complete loss, though, because the slate roof was salvaged and used on a new building. And I'm willing to bet the clever raccoon found itself a new home too, but probably not in a barn.



BARNs CAN BE REBORN, TOO

Not all barns are neglected. The century-old barn near Zelienople, PA (top), had a new Vermont “sea green” slate roof installed on it by Orion Jenkins (l) and Brent Ulisky (r) in 2003. Eleven years later, the same crew plus Matt Rak (inset), installed new VT black slate on a barn near Greenville, PA (bottom).





PART I: UNDERSTANDING SLATE ROOFS